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ABSTRACT

Research is presented exploring the individual programing practices at both Pamlico High School and Pamlico Technical Institute, Pamlico County, North Carolina and possible means by which the two institutions could better coordinate articulation of their occupational education program activities. The two institutions offer the only available secondary and postsecondary occupational education programs in the rural, undeveloped county. Five chapters include: (1) an introduction to study background material; (2) the theoretical orientation of the study, presenting the organization, social systems, articulation and programing concepts assessed; (3) research methodology, discussing procedures for securing objective and subjective data; (4) a summary of findings, presenting analysis under the headings of socioeconomic conditions, structure, communication, renewal process, need analysis, program design, and evaluation; (5) conclusions and recommendations, based on the findings suggesting means to better utilize facilities and articulate program activities. Further study is recommended regarding questions of the desired scope and intensity of the coordination between Pamlico High School and Pamlico Technical Institute. Appended are: an interview guide for school personnel; and listing of articulation committee participants; criterion items used; summarization of data resulting from the 55 personal interviews; and tables indicating net migration and commuting patterns for the county. (LH)

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OCCUPATIONAL EDUCATION RESEARCH PROJECT FINAL REPORT

VOCATIONAL EDUCATION AMENDMENTS OF 1968 (PUBLIC LAW 90-576)

(TITLE I - PART C - SEC. 131-B)

AN EXPLORATORY STUDY OF PROGRAMMING FOR OCCUPATIONAL EDUCATION IN THE PAMLICO EDUCATIONAL SYSTEM

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PREFACE

Upon approval of the research grant, Mr. Larry Kemp, Director of Occupational Programs, Pamlico Technical Institute, was designated project director. A request for assistance in the implementation of the study was made to the Department of Adult and Community College Education at North Carolina State University. A doctoral candidate, Mr. Donald R. Warren, was assigned duties as research investigator for the project -- which also constitutes the basis of his doctoral dissertation. The final project report, contained herein, was abstracted from the completed doctoral study submitted in June of 1973 by Mr. Warren. Mr. Harold N. Way, Instructor of English, Pamlico Technical Institute, assisted in the writing and abstraction of the project report and, furthermore, supervised the preparation and editing of the manuscript.

ACKNOWLEDGEMENTS

Many individuals are responsible for the successful completion of this project. The authors graciously wish to acknowledge the assistance and cooperation of Mr. Paul Johnson, President of Pamlico Technical Institute and Mr. George Brinson, Superintendent of Pamlico County Schools. Our thanks are also expressed to the faculty and staff members of both institutions for their time and cooperation during the interview process. We would also like to express our gratitude to Pamlico Technical Institute for providing office space for the research work. Next, a word of thanks goes to the State Board of Education for the funding of the project. Finally, special words of gratitude must be extended to Doris Southerland for the typing and the preparation of the manuscript. Her criticism in detail, both substantively and editorially, was a tremendous asset to the project's completion. For those whose assistance and encouragement is not directly acknowledged, the authors are nevertheless extremely grateful.

ABSTRACT

The purpose of this study was to explore the programming practices for occupational education at Pamlico Technical Institute (PTI) and their articulation with Pamlico High School (PHS).

The difficulty of implementing and supporting a comprehensive occupational program in a rural county of limited population, economic resources, and industrial growth gave rise to the assumption that increased efficiency might result from greater coordination of resources currently available at PTI and PHS. Under auspices of a research grant provided by the North Carolina State Board of Education, an articulation committee composed of personnel from PTI and PHS identified examination of programming practices at both institutions as one means of generating recommendations by which increased coordination might be effected.

The theoretical setting of the study was one of programming activities by relatively autonomous organizations within the context of a social system. A concept of programming was developed and used as a basis for construction of an interview guide designed to elicit data concerning the programming process at PTI and PHS.

Interviews, observations and content analysis of existing and elicited documents were employed in the collection and analysis of data. Conditions which appeared to inhibit coordination of programming activities were: (1) The absence of locally defined objectives, (2) lack of formal communication, (3) structure which inhibits a collective reaction to environmental considerations, (4) need analysis

mainly limited to expressed aspirations of students, (5) lack of long-range plans for occupational education, and (6) lack of defined local criteria evaluation of program effectiveness.

The researcher found that increased coordination of occupational programs might be effected by: (1) study of total community needs relating to occupational education and delineation of system objectives encompassing both PTI and PHS, (2) creation of an advisory committee for occupational education with membership including personnel of both institutions, (3) a shared and structured procedure for assessment of information pertaining to occupational programs, (4) periodic meetings of all system personnel and joint utilization of library resources in collection and dessimination of pertinent research data, (5) meetings of personnel along subject area lines to develop standardized plans of work, and (6) development of local criteria for the evaluation of program effectiveness.

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INTRODUCTION

Pamlico High School and Pamlico Technical Institute constitute the only sources of formal public occupational education in Pamlico County, North Carolina. First established in 1961 as an extension unit of the Lenoir (County) Industrial Education Center, Pamlico Technical Institute has evolved into a fully chartered institution within the North Carolina Community College System, and is the only source of post-secondary education in the county. From all indications the role of Pamlico Technical Institute (PTI) in providing such education will continue to expand. This anticipated growth, contiguous with increased demands on the public's financial resources, will necessitate continuous assessment and redirection of relationships between the technical institute and other public institutions in order that expanded educational opportunities, consistent with dynamic societal needs and institutional roles, are available to all who can profit from the instruction. Furthermore, these learning opportunities must be provided at costs which do not prevent the realization of each individual's potential for social and intellectual growth.

Purpose of the Study

With two independent public educational systems offering the only available secondary and post-secondary occupational education programs in a county of such limited resources as described in the section that follows, questions of economic feasibility and practicality of supporting both have naturally arisen in some quarters. Based on the assumption that increased efficiency, and thus reduction in cost, might result from a coordination of efforts between PTI and Pamlico High School in providing

occupational education programs, the purpose of this study was to investigate the programming practices of PTI and their articulation with the secondary public system (grades 10-12) in Pamlico County.

Statement of Problem and Research Objective

The overall objective of this study was to identify current programming practices in the Pamlico County educational system, and to formulate recommendations which could make these practices more effective, with primary attention directed to the programming of occupational education programs.

The approach employed in this study was based on certain assumptions generated by a study of the North Carolina State Plan for Occupational Education (1972). These assumptions were:

1. Identifiable characteristics in the plan may be used in delineating programming activities in both Pamlico High School and PTI.

2. The identifiable characteristics in the plan may serve as guides to develop recommendations for coordination of programming activities between the two institutions.

3. A model of programming consistent with activities identified in the plan can be employed in the design of programming activities which would accommodate the educational objectives of both institutions.

4. Coordination of programming between Pamlico High School and PTI can be related to the degree that the two institutions exhibit characteristics of a common social system.

These assumptions gave rise to the following questions: Is there planned and coordinated articulation of programming activities at both secondary and post-secondary levels concerning (1) patterned interaction of personnel, (2) communication between institutions within the educational system, (3) institutions and the renewal process, (4) the analysis of needs

relating to occupational education, (5) the design and implementation of occupational education programs, and (6) the evaluation of occupational education programs?

In an effort to answer these questions, the following specific objectives appeared pertinent, i.e., to identify:

1. Structural characteristics, encompassing both institutions, whereby activities of personnel are coordinated.
2. Formal communication patterns between administrators within the educational system.
3. Activities by which institutions assess and react to change in the environment.
4. Institutional efforts in the analysis of educational needs of its target groups.
5. Activities by system personnel in the design and implementation of occupational education programs.
6. Existing evaluative techniques as related to programs of occupational education.

Setting of the Study

Pamlico County is located in the central plains of eastern North Carolina approximately halfway between the Virginia and South Carolina state lines. Bordered on the north by Beaufort County and the Pamlico River, on the east by Pamlico Sound, on the south by the Neuse River, and on the west by Craven County, Pamlico County is a peninsula jutting into the Pamlico Sound. Furthermore, the absence of suitable roads and bridges crossing either the Pamlico or the Neuse River (although both are served by toll-free ferry) tends to restrict severely north-south traffic through the county, which results in an isolation which is unique in North Carolina (Economic Potential, 1969).

Rural Pamlico County's population is dispersed over a land area of 338 square miles or 216,327 acres which support 73,719 acres of

farmland. The balance is composed primarily of forest and a very large pocosin (an upland swamp of the Coastal Plains of the southeastern United States). The 1970 U.S. Census indicated a population of 9,467 residing in Pamlico County, a decline of 3.9 percent from 1960. This seemingly small decline in total numbers (383), however, does not adequately account for the long-range effects of out-migration, which was particularly heavy in the preceding decade of 1950-60 (Table 1). The pattern of out-migration continued during the decade of 1960-70 as the 1970 population reflects an 11.7 percent decline when the natural increase (births in excess of deaths) is applied to the 1960 population (Simpson, p. 43). A large percentage of the 1950-60 out-migration consisted of recent high school graduates, persons approximately 21 years of age, and individuals replaced by mechanization in agriculture, commercial fishing, and seafood processing. County leaders attributed the loss of county youth to three fundamental changes in the economic base of the county: (1) a trend toward fewer and larger farms, (2) mechanization of agriculture, and (3) lack of economic opportunity in fields other than agriculture (Pamlico County Planning Board, 1969).

Table 1. Net migration--Pamlico County, 1950-1960[a]

Population factor	Number
Total population, 1950	9,993
Natural increase, 1950-1960[b]	1,548
Expected population, 1960[c]	11,541
Actual population, 1960	9,850
Population loss due to migration	-1,691

[a]Economic Potential (1969).

[b]Number of births in excess of deaths

[c]1950 population plus natural increases.

While fundamental shifts in Pamlico County's economic base are not germaine to the objectives of this study, the conclusions of the Pamlico County Planning Board were somewhat substantiated when an examination of the migration pattern by race, sex, and age group (Appendix Table 1), showed out-migration to be associated with individuals between the ages of 15 and 29 -- an age group normally involved in securing initial employment and thus most susceptible to economic fluctuations.

In 1969 Pamlico County ranked eighty-first in North Carolina in per capita income, with an average of $1,882. Unemployment in 1962 was listed at 9.1 percent of the work force; in 1971 this figure had only decreased slightly to 8.6 percent (Fogle, 1972).

Pamlico County has no significant urban area, and individuals seeking employment are faced with the choice of migrating or commuting to urban areas in reasonable proximity to their homes. While data relating to out-migration indicated that the young tended to leave in search of employment, the commuting patterns revealed a lack of capability within the county's economy to provide jobs for those who did remain. In 1960 some 47 percent of the county's 2,090 employed residents left the county daily to earn a living (Appendix Table 2).

The Economic Base of Pamlico County

The economy of Pamlico County may be classified into four broad areas: (1) agriculture, (2) retail trade, (3) manufacturing, and (4) other economic enterprises. Data relating to these areas are presented to provide the reader with indicators of size and relative importance of particular economic activities.

Agriculture. In the decade from 1959 to 1969 the number of farms in Pamlico County steadily decreased -- from 466 to 330 -- while the size of individual units increased -- from 133 to 172 acres (Economic Potential, 1969; Fogle, 1972). This phenomenon was the result of increased mechanization requisite to increased production and, concomitantly, a reduction in cost per unit produced. As noted previously, increased mechanization also reduced the number of individuals employed in agriculture (a drop from 880 in 1962 to 530 in 1970), although skill requirements of farm employees increased (Fogle, 1972).

While the number of farms under cultivation and the size of the labor force required for their operation has diminished, the economic contribution of agriculture (e.g., field crops) has expanded (Table 2). The increase of some $1.4 million in farm income in the period 1959-70 resulted from a shift in production to such crops as soybeans, corn, wheat, oats, potatoes, and tobacco. Furthermore, one can assume that increased demands for food and fiber will extend into the foreseeable future. Thus, the role of agriculture in the economy of Pamlico County is predicted to expand, although the percentage of individuals earning their livelihood in direct farming operations will remain static or further decline (County Commissioners, 1968).

Retail Sales. Retail and wholesale trade in Pamlico County lagged far behind the percentage growth set by North Carolina during the period 1947 to 1962. From 1962 to 1966, however, the percentage increase for the county exceeded that of the state as a whole (Table 3). Furthermore, the period 1962 was marked by an increase of 50 percent in number of individuals employed in retail trades and services (Table 4).

Table 2. Value of principal crops in Pamlico County[a]

Product	Value in Millions			
	1967	1968	1969	1970
Tobacco	.935	.760	.921	.936
Corn	.715	.462	.536	.679
Soybeans	1.218	.859	1.100	1.095
Potatoes	.361	.406	.261	.328
Wheat and Oats	.107	.185	.142	.154
Total	3.336	2.672	2.860	3.191
Total 1959 - 1.750[b]				

[a] Simpson (1973).

[b] U.S. Census of Agriculture (1959 and 1964).

The increase in percentage growth and number of employees in retail sales is attributed to the construction of additional sales outlets within Pamlico County. Prior to 1962 residents of the county traveled to nearby Craven and Beaufort counties for a significant percentage of retail purchases, including common canned and packaged foods. During the period 1962 to 1970, the construction of supermarkets, a drug store, an outlet for a national sales firm, and other service type operations reduced the flow of retail dollars from the county.[1]

[1] Personal interview with a director of the Pamlico County Chamber of Commerce (1972).

Table 3. Percentage growth in retail sales, Pamlico County[a]

Locale	1954[b]	1958	1962	1966
Pamlico County	81.0	36.9	30.0	38.7
North Carolina	83.6	41.4	48.4	32.5

[a]Economic Potential (1969).

[b]Percentage increase over base period of 1947.

Table 4. Number of workers employed in retail sales and percentage of total labor force[a]

Workers	1962	1970
Number of employees in retail establishments	200	300
Percentage of the total Pamlico County labor force	9.6	14.5

[a]Fogle (1972).

Manufacturing. In considering those firms engaged in manufacturing activities, attention was directed to those classified as "basic" industries. Basic industries are defined as those manufacturers who sell the majority of their products outside the county. In so doing, these manufacturers bring in "outside" money which stimulates the local economy. Basic industries within Pamlico County are seafood processing, forest products, and agriculture exports.

Three factors collectively appear to affect the economic potential of manufacturing in Pamlico County in terms of providing

expanded employment opportunities for the labor force: (1) a lack of diversification, (2) limited demands for new employees resulting from expansion, and (3) a disproportinate number of low wage occupations for women (Economic Potential, 1969).

Other Economic Enterprises. The principal remaining economic activities in Pamlico County consist of five timber companies engaged in the harvest of pulpwood for use in paper production (Table 5). While the land holdings of these companies are extensive, the majority of wealth produced by these holdings leaves Pamlico County as the wood is converted to paper in surrounding counties. Also, the removal of this amount of land -- 24 percent of the land area of the county -- from local ownership reduces the total amount of land that could be put to agricultural uses (Economic Potential, 1969).

The Pamlico County Educational System

As stated earlier, Pamlico High School and Pamlico Technical Institute constitute the only sources of formal public occupational education in Pamlico County. Primary financial support for these institutions comes from state and federal sources. Local support consists of some 8 percent of the institutions' current expense budgets (Pamlico County Planning Board, p. 27).

Pamlico High School. Pamlico High School is a Class 2-A school (state classification by number of students) with a current enrollment of approximately 600 students in grades 10-12. The school has an instructional faculty and support staff of 35 persons, 11 of whom have full or partial responsibility in providing occupational education programs. Occupational education programs currently offered at Pamlico

High School are: (1) Agricultural Education, (2) Distribution and Marketing Education, (3) Consumer and Homemaking Education, (4) Occupational Home Economics, (5) Office Occupations Education, (6) Trade and Industrial Education, (7) Career Exploration Education, and (8) Seafoods Industries.

Table 5. Land holdings of timber companies in Pamlico County[a]

Company	Land holdings Acres
Weyerhauser	13,400
Pamlico Timber Company	16,000
International Paper Company	10,700
Taylor Company	11,400
Reigal Paper Company	2,000
Total	53,500

[a]Information obtained from the Pamlico County Tax Office.

Pamlico Technical Institute. North Carolina State Board of Education policy sets the role of the technical institute as (Trustee Responsibilities, 1970, pp. 8-9) "filling the gap in educational opportunities between the high school and the senior college and university." In striving to fulfill its role, Pamlico Technical Institute offers (1) two-year technical level programs leading to the Associate in Applied Science Degree, (2) one-year programs at the trade level leading to the diploma or certificate, and (3) occupational and avocational short courses which may lead to the certificate.

Enrollment at Pamlico Technical Institute has ranged between 200 and 250 full-time equivalent students. Currently, the institution employs 19 administrative, instructional, and staff personnel. In

addition the institution employs a variable number of part-time instructors in the extension division.

The relative youth of Pamlico Technical Institute (when compared to the public secondary school in North Carolina) appears to have some effect in the delineation of institutional roles in the Pamlico County educational system. In effect, the technical institute is a "new boy on the block" whose presence may have created some concern in public secondary education over the allocation of fiscal resources already limited by the poor economic condition of the county. Furthermore, the "birth" of PTI within the secondary "family" and the subsequent dissolution of these close ties were deemed to be important considerations in effecting new or improved coordination in the provision of occupational education within a systems concept. Thus, attention was directed to the origin and development of PTI.

The Evolution of Pamlico Technical Institute

The origin of PTI can be traced to a series of exploratory conferences held in 1961 between officials of the North Carolina Department of Public Instruction and educational leaders in Pamlico, Craven, and Carteret counties. The purpose of these meetings was to explore the possibilities of creating extension units of Lenoir (County) Industrial Education Center (IEC) in one, or more, of the three counties. The rationale for the extension unit was the provision of post-secondary technical and vocational programs at locations more accessible to residents of the three-county area.

In July, 1961, the Pamlico County Board of Education formally agreed to sponsor such a unit (Craven and Carteret counties were to follow suit at a later date). Under the terms for operation of the

Pamlico Unit, Lenoir IEC would provide salaries for staff and teachers from the institution's allocation of state and federal funds. The Pamlico County Board of Education provided the physical facilities and other necessary local operating expenses from general tax revenue.

Operation of the Pamlico Unit commenced in September, 1962 in facilities located on the campus of Pamlico High School in Bayboro. The program was under the supervision of T. J. Collier, the Superintendent of the Pamlico County School System. The initial enrollment (part-time adults) was approximately 400 evening students attending classes offered at numerous locations within the public school facilities of the county. Since enrollment records for this period of operation are not available, it is impossible to convert the part-time figure to full-time equivalents.

The early operation of the unit was somewhat complicated by a dispute within the local educational community between supporters of the current superintendent of schools and a second group which had supported the application of a challenger for that position in 1961. One effect of this controversy was a close identification of the Pamlico Unit with the superintendent of schools. In some quarters the new institution was referred to as "Collier's Folly."

In May, 1963, the County Board of Education employed an Assistant Director for the Pamlico Unit. However, final responsibility for the operation of the institution remained with the local Board of Education and the superintendent of schools -- who resigned his office in late 1963.

The period of 1963-1967 is referred to as the "crawl stage" of the Pamlico Unit. Operations remained in close proximity to the local high school with control of local resources firmly vested with the new

superintendent of schools. In September, 1963, high school vocational students were admitted to the Pamlico Unit for the first time. Students attended their regular high school classes for one-half day and vocational classes in the Pamlico Unit for the remaining half. The admission of high school students, as well as adults, continued until 1965, at which time high school students were removed from the unit in accordance with provisions of the Community College Act of 1963 (G.S. 115A), which established the North Carolina Community College System as a separate entity under the aegis of the State Board of Education.

The year 1967 was significant in the development of PTI in that (1) the local superintendent of schools refused to consider or submit the unit's budget request ($11, 324 current expenses) for fiscal 1967-68, (2) the Pamlico Unit was separated from the parent institution -- now Lenoir Community College -- by action of the State Board of Education, and (3) a more uniform statement of operating procedures and relationships between secondary and post-secondary institutions was developed and implemented.

The conflict with the local superintendent of schools was grounded in two fundamental beliefs: (1) the existence of a local director placed the superintendent in the position of having responsibility for something over which he had little actual control, and (2) the increased demands of the unit for local and state financial resources had an adverse effect on the operations of the public secondary schools. The threat of open conflict was averted by a joint meeting of State Department of Community Colleges officials, local administrators, the Pamlico County Board of Education and County Commissioners, and the unit's Advisory Committee. While the unit's

budget was funded as requested, the effect was the creation of an undercurrent of ill feeling between local administrators which continued until the subsequent resignation of the superintendent of schools.

Under the leadership of a new superintendent, the relationship between PTI and the secondary schools showed marked improvement. While institutional boundaries were to be more clearly delineated, friendly dialog between the superintendent and the president of PTI set the stage for increased cooperation between the two institutions.

In September, 1967, the Pamlico County Board of Education formally adopted new operating procedures sanctioned by the State Board of Education. This new relationship provided for:

1. The direct allocation of state and federal funds to the institution -- now designated Pamlico Technical Institute -- for the employment of staff and faculty, the purchase of instructional equipment, library acquisitions and other current expense items.

2. The setting aside of local tax funds within the budget of the Pamlico County Public School System for use at the discretion of the chief executive officer of the technical institute.

3. The appointment of eight citizens (four each by the Board of Education and the County Commissioners) to serve as trustees of the institution.

Furthermore, the Pamlico County Board of Education granted PTI the use of an abandoned school facility located approximately one mile from the high school. This facility had been damaged severely by a tornado which struck the area in 1965. The Board of County Commissioners also allocated the controversial $11,324 for the local required operating expense and renovation of the damaged facility.

With respect to physical facilities, PTI may aptly be termed a "homemade" institution. All buildings at the present site were remodeled by students, administrators, and instructional staff. Total cost in tax

funds was less than $10,000 -- which was used primarily for the purchase of renovation materials. The student body played a vital role in this stage of development by holding a number of social and athletic events to raise funds for use by the institution. Also, during this period of time (1965-1967), the institutional staff grew from a single individual to an administrative staff of three, a bookkeeper, two secretaries, and six full-time instructional personnel.

On July 1, 1971, the State Board of Education approved the conversion of PTI from contractual to chartered status, an action based on a revision of the North Carolina State Constitution and an amendment to G.S. 115A (G.S. 115A-20) enacted by the 1971 General Assembly. In effect, the amendment permitted a Board of County Commissioners to levy taxes for the local support of all institutions within the Community College System. The net result was to eliminate the absolute requirement for local approval (by referendum) prior to the collection of public tax monies for the specific support of PTI. Prior to this action, local tax money flowed through the Pamlico County School System to PTI in order to meet the requirements of existing law. A second effect of chartered status was to sever the formal relationship with secondary education at the local level. Responsibility for preparation and submission of a local budget, expenditure of funds, and accounting for the legality of expenditures passed from the local Board of Education to the institutional Board of Trustees.

As a chartered institution, PTI acquired four additional trustees appointed by the governor of North Carolina. Thus, the Board of Trustees became a body corporate empowered to hold title to property and the full exercise of other responsibilities as delineated under G.S. 115A.

On December 14, 1971, the voters of Pamlico County approved a $150,000 bond issue for the construction of a new facility to be located some 10 miles from the present site. These funds were matched from state appropriations as provided in G.S. 115A. Currently, the institution has applied for an EDA grant of $500,000 and a grant of $200,000 from the Coastal Plains Regional Commission, for a total proposed building package of $1,000,000. Building plans, currently in the design stage, call for approximately 35,000 square feet of instructional space, library facilities, a student lounge, and administrative area.

Significance of the Study

1. An exhaustive search of the literature revealed no previous studies concerning program articulation within the context of an educational social system and involving such elements as shared objectives, communication patterns, and structural considerations, as well as specific course materials.

2. Findings of this study may provide information whereby administration may reassess institutional need analysis, program design and implementation, and evaluation of occupational education programming.

3. Data generated in the study may provide indicators of needs for administrative action in (1) establishing shared objectives, (2) identifying institutional roles at local levels, and (3) promoting patterned activities by system personnel.

4. Data generated in this study also may provide indicators of needs for some reassessment of state policy as it relates to the Pamlico County educational system.

5. Techniques employed in this study may be applied to similar educational systems.

Limitations of the Study

Any effort to analyze or apply the findings of this study must take certain limitations into consideration.

1. The study was limited to a single educational system operating within guidelines set by the North Carolina State Board of Education in accordance with legal provisions enacted by the North Carolina General Assembly.

2. Conclusions made on the basis of the data generated are limited to the educational system and curriculum under study.

3. The researcher exercised no control over situational factors employed in the study.

4. During the course of this study PTI initiated an in-service training program centering about institutional objectives, in which the researcher was designated the "discussion leader." The subsequent provision of salary, office space, and clerical assistance for the researcher resulted in some secondary school respondents classifying him as a full-time employee of PTI. This was most evident at the administrative level where respondents would preface a statement or question with "you people at the technical institute." This attitude may have affected the openness of these respondents' answers to the interview questions.

5. Generalizations drawn from the findings of the study are limited in their application to other educational systems engaged in similar activities.

Definition of Terms

For clarity of meaning and convenience of the reader, certain terms used throughout this study are defined in the listing that follows.

Adult: refers to an individual who is either a high school graduate of beyond the compulsory age limit of the public school system and has left the public schools.

Articulation: for purposes of this study, articulation is defined as the process by which subsystems of the educational system interact to provide integration and continuity of learning experiences designed to meet the needs of the student and the environment in which he must function.

Educational need: refers to something a person ought to learn for his own good, for the good of the organization, or for the good of society (Knowles, 1970).

Educational System: in this study refers to public secondary and post-secondary institutions in Pamlico County that offer educational opportunities from grade 10 throughout the lifespan of the individual.

Environment: refers to the sum total of factors which surround and influence the educational system, its subsystems, or individuals constituting its membership. Elements of the environment are people, physical resources and climate, economic and market conditions, attitudes, and laws (Hicks, 1972).

Full-time equivalent student: refers to a method of computing full-time enrollment at institutions in the North Carolina Community College System. A full-time equivalent (FTE) student is one who is enrolled in a class or program 16 hours a week for a period of one quarter (11 weeks).

Institution, chartered: denotes an institution in the North Carolina Community College System whose local support funds are not allocated through a cooperating, local secondary school unit.

Institution, contractual: an institution within the North Carolina Community College System supported through an arrangement with one or more local secondary units whereby local tax support for the institution is included in the local budget for the secondary school(s). In addition, contractual institutions have 8-member boards of trustees rather than the 12 specified for chartered institutions. Currently, there are no remaining contractual institutions in the North Carolina Community College System.

Linkage: the process by which two or more subsystems within the educational system interact for purposes of attaining shared objectives.

Mission statement: a term employed in the post-secondary schools denoting a broad and comprehensive statement of the central and continuing purpose of the agency which justifies its continued support by society, and which provides direction for the management and allocation of resources for its operation (Handbook, 1972).

Objective: refers to the desired state of affairs which the social system expects to accomplish through the interaction of its membership.

Objective, behavioral: refers to well-stated teacher-learner objectives which clearly define the learner, the behavioral change to be sought, and the content area in which the change in behavior is to become operative (Boone et al., 1971).

Objective, institutional: refers to objectives which have their origin in the contemporary needs of the institution's publics and constitute the framework within which all decisions and actions about the institution's program must be linked. They are detailed subdivisions of the statement of institutional purpose and are timeless, usually nonmeasurable, philosophical statements which provide direction to the institution (Boone et al., 1971).

Objective, program: refers to statements of measurable outputs or accomplishments to be attained. Program objectives are derived from long-range goals, and project what the institution will do during the period in a manner which can be measured (Handbook, 1972).

Organization: refers to collectivity with a relatively identifiable boundary, a normative order, authority ranks, communication systems, and membership coordinating systems; this collectivity exists on a relatively continuous basis in an environment and engages in activities that are usually related to a goal or a set of goals.

Program: refers to the courses in one field of study which are organized to fulfill the same general objective and are conducted along similar lines (Benjamin, 1959).

Programming: refers to a complex and all-pervasive concept that is used to explain and describe the individual and collective efforts of professional educators and volunteer lay leaders in planning, executing, and evaluating educational programs (Boone et al., 1971).

Role: refers to a collectivity of behavior patterns expected of institutions -- specifically, Pamlico Technical Institute and Pamlico High School -- occupying specified status positions within the public educational system of North Carolina.

Standard: refers to the required or acceptable behavior of a collectivity operating within the public educational system of North Carolina.

Target group: refers to identifiable groups within the institution's clientele for which specific programs of action are designed by personnel of the educational system.

THEORETICAL ORIENTATION OF THE STUDY

The concepts of organization, social systems, articulation, and programming constitute the theoretical orientation for this study. These concepts were explored individually and analytical procedures were delineated whereby an assessment could be made as to the nature of programming and coordination of institutional efforts within the Pamlico County educational system.

The Macro Concept of Organizations

Mott (1965) defined an organization as a concept which embraces a wide range of collectivities. Within this context, a surgical team, a family, a hunting and gathering band, a friendship clique, the League of Women Voters, General Motors Corporation, or a lynch mob all constitute various forms of organizations. Hicks (1972, p. 22) expanded this definition by noting that all organizations exhibit some common characteristics; specifically:

1. An organization always includes persons.
2. These persons are involved with one another in some way -- that is, they are interacting.
3. These interactions always be ordered or described by some sort of structure.
4. Each person in the organization has personal objectives, some of which are the reason for his actions. He expects that participation in the organization will help to achieve his objectives.
5. These interactions can also help to achieve compatible joint objectives, perhaps different from, but related to, their personal objectives.

While these characteristics speak to the internal aspects of an organization, they do not incorporate the social setting in which the

organization must function. Olsen noted the pervasiveness of these external factors, which are termed endless bonds of interdependency uniting all aspects of social life. He further observed (Olsen, 1968, p. 28):

> Individuals and organizations almost always exist and act within a complex social environment. Surrounding virtually every social phenomenon is a vast web of organized social life, which somehow must be dealt with or taken into account. . . . The natural environment, population characteristics, qualities of human beings, accumulated material technology, and the interdependent social environment do not fully determine the exact ways in which men organize their collective actions, but their influence can never be escaped.

The concept of organizations and the social setting in which they must function gives rise to another phenomenon characteristic of collectivities -- instances in which two or more organizations interact for purposes of achieving individual or mutual objectives. Loomis (1960, p. 32) defined this process as "systemic linkage" in which two or more elements of at least two social systems are articulated in such a manner that the two systems in some ways and on some occasions may be viewed as a single unit. The utility of systemic linkage centers about a pooling of resources to the solution of problems affecting each organization. In so doing, the capacity of each organization to meet the demands of its clientele -- in this instance the taxpayers of North Carolina -- may be enhanced.

The Social System Concept

Within the context of the Pamlico educational system, the concept of linkage whereby institutional resources may be combined and brought to bear on a common problem has been identified. The extent to which linkage of institutions effectively moves to the solution of problems is a

more complex issue involving the degree in which they assume characteristics of a common social system. Thus coordination of two organizations is directly related to such elements as shared goals, common norms, and defined roles. Furthermore, the process of coordination is grounded in effective communication whereby these elements are understood and accepted by personnel as guides for behavior.

A social system then may be defined as any system of social action involving a plurality of interacting individuals oriented to a situation and with a commonly understood system of cultural symbols (Parsons, 1949). Thus a social system may be thought of as a system of interaction between individuals. The extent to which these interactions are structured (i.e., form identifiable patterns) constitutes the structure of the social system.

Loomis (1960) advanced a conceptual model which can be employed in the analysis of organizations as social systems. Loomis held that a social system is composed of interactions by a plurality of individual actors whose relationships to each other are mutually oriented through the definition and mediation of a pattern of structural and shared symbols and expectations. In addition (Loomis, 1960, p. 3):

> . . . interactions tend to develop certain uniformities over time, some of which tend to persist. As they are orderly and systematic, they can be recognized as social systems. Because the social system is composed of identifiable and interdependent parts, it is said to possess social structure.

Loomis developed his Processually Articulated Structural Model around elements and processes that articulate elements within a social system. Elements refer to basic units of social interaction which collectively form a larger whole. Within the Loomis model, these

concepts -- elements and processes -- may be employed as units of analysis in examining a social system or specific aspects of a system.

Pamlico Educational System as a Social System

Within the definitions advanced, PHS and PTI may be treated as subsystems of a single organization. As an organization, the system may then be analyzed in terms of a social system. This assumption was based on the following factors:

1. Organizational activities by both institutions toward the attainment of shared goals.
2. Patterned activities of a number of individuals.
3. The institutions are subunits of a public agency -- the North Carolina State Board of Education -- and jointly dependent on legislative appropriations and local taxation for the system's energy input.

The Analytical Framework

The principal concern of this chapter was the development of an analytical model which could be used in assessing the nature of coordination -- relating to programming of occupational education -- evident in the Pamlico educational system. For analytical purposes, the value of treating the educational system as a social system and institutions as subsystems was previously identified.

The principal concern of the researcher was to identify current programming practices in the Pamlico educational system as they related to occupational education and to suggest possible modifications by which these practices might be better coordinated. To achieve this objective, the following procedure was utilized: (1) identification of the legal basis for programming of occupational education in Pamlico County (The State Plan), (2) development of a concept of articulation,

(3) development of a model of programming, and (4) collective employment of steps one, two, and three as a framework for identifying current programming practices and generating recommendations for change.

Articulation

For purposes of this study, articulation was defined as the process in which personnel within subsystems of the educational system interact to provide consistent, continuous, and interdependent learning experiences designed to meet the needs of its clientele and the social setting in which the student and the system must function. The process denotes coordination of efforts by system personnel in: (1) the initiation of activities facilitating the adjustment of the institution to forces requiring redirection of organizational activities, (2) need identification and analysis, (3) program design and implementation, (4) the use of formal channels of communication, and (5) evaluation of process and output.

Programming

The development of a programming concept encompassing two relatively autonomous educational institutions presented several problems. Basically, these centered around: (1) differences in terminology employed by the two institutions, (2) the identification of institutional roles within the educational system, and (3) the sequence of, and emphasis on, specific elements within the planning process in each institution.

A comparison of individual programming activities at both PHS and PTI identified four stages in the programming process. These may be broadly classified as (1) the collection of data relating to needs for occupational education, (2) the analysis or treatment of the data

whereby needs are translated into a plan of action, (3) program design and implementation, and (4) the evaluation of program effectiveness.

For purposes of this study the researcher's concept of programming must include the elements previously identified and provide some basis for relating the activities of the two units in the Pamlico educational system. In formulating such a concept of programming, the researcher drew heavily from the works of Boone et al. (1971), Hull (1971), and the North Carolina Department of Public Instruction (Program planning Guide, 1971).

Programming Defined. Boone et al. (1971) defined programming as a complex and all-pervasive concept that is used to explain and describe the individual and collective efforts of professional educators and volunteer lay leaders in planning, executing, and evaluating educational programs. As a process, programming encompasses the planned and coordinated educational activities of individuals in effecting strategies that should culminate in desirable changes in the patterned behavior of people and the consequent alteration of systems. Elements of the programming process, as defined herein, are: (1) pattern activities (coordination), (2) communication, (3) institutions and the renewal process, (4) need analysis and leader involvement, (5) program design and implementation, and (6) evaluation.

Coordination. In the broadest sense, coordination of organizational activities is the nucleus of the formal leadership role. In this light administrative functions (e.g., planning, motivating, controlling, etc.) are supportive in that their successful implementation enables one to "coordinate" the activities of others. The degree of coordination of activities may vary among organizations according

to their purpose and/or leadership style. The criterion of success in coordination, however, is related to how well the organization achieves its objectives. In this context, coordination denotes a process in which the leader engages in a variety of activities which normatively systematize the actions of organizational personnel. Koontz and O'Donnell (1968) identified these activities as reconciling differences in approach, timing, effort, or interest and to harmonizing cooperative and individual goals.

Mary Parker Follett further identified certain principles that guide leaders in carrying out the coordinative process (George, 1969). These are: (1) direct contact through interpersonal relationships; (2) initial contact in early planning and policy-making; (3) reciprocal relationships in which one influences and, in turn, is influenced; and (4) continuity of contact by which the leader(s) react to situational changes -- anticipating problems and preventing their occurrence.

Communication. The utility of communication centers about the interchange of thoughts or information which promotes mutual understanding of institutional and system goals, and the behavior expected of personnel. In the final analysis effective communication should promote a willingness by institutions to cooperate in activities that move the educational system toward goal accomplishment. This assumption was based on the existence of certain conditions identified by Barnard (1938) as (1) an understanding of behavior expected of the individual, (2) the belief that such behavior is consistent with organizational purposes, (3) the belief that the desired action is compatible with personal interest, and (4) the ability of the individual to perform the action. Since a comprehensive synthesis of

communication was beyond the scope of this study, communication was examined only in terms of responsibility, purposes, and barriers.

The responsibility for communication in the complex social system rests, in varying degrees, with all personnel. This concept of shared responsibility implies that individuals are both senders and receivers of information; i.e., communication is a two-way process encompassing transmittal to a point (Simon's "Decisional Centers") and the feedback of information from these points to other elements within the organization. Moreover, as Simon (1957, p. 155) observed:

> [Communication] is a process that takes place upward, downward, and laterally throughout the organization. The information and orders that flow downward through the formal channels of authority and the information that flows upward through the same channels are only a small part of the total network of communication in any actual organization.

The several purposes of communication are relevant to this study to the extent that they enhance the potential for coordination of effort between institutions within the Pamlico educational system. Essentially, the purpose of communication is to bring about a change in the behavior of system personnel. As a practical matter, this change can be effected through the use of communication for purposes of (1) orientation of personnel, (2) providing operational information, (3) individual appraisal, and (4) control -- the "rules of the game."

Koontz and O'Donnell (1968) held that effective communication is characterized by certain principles as clarity, attention of the receiver, integrity (does the message relate to organizational activities?), and strategic use of information channels. For purposes of this study, the researcher assumed that communication relative to the coordination of

occupational education programs had the attention (interest and support) of educators in both institutions. In addition no formal effort was made to assess the clarity of information. In essence the structural patterns of informational exchange within the educational system received primary attention.

The literature identifies a number of factors which thwart or prevent an effective exchange of information. Lack of clarity, inability to translate, inattention, faulty assumptions, distrust and fear, and plain laziness adversely influence the communication process. In the context of a social system, however, barriers to communication must also be considered in terms of structural and functional relationships. Hence, possible additional barriers to effective communication are:

1. The lack of clearly articulated goals and objectives for the total educational system; thus, a lack of standards by which the integrity of communication is maintained and/or evaluated.

2. The absence of structural relationships by which communication may be systematized; thus, an inability to coordinate the efforts of similar divisions, or roles, within the educational system.

3. A lack of strategic bilateral use of informal communication channels centering about the common interest, attitudes, etc., of groups within the educational system.

Institutions and the Renewal Process. Organizations are created and maintained by a society for the accomplishment of tasks which can best be effected through collective actions. Thus, organizations are the creatures of needs originating within the total society. The renewal process denotes a variety of planned activities designed to bring about a more harmonious relationship between the educational system and the publics served. Boone et al. (1971, p. 6) noted the dynamic aspect of organizations seeking congruency with their environment:

> An educational institution exists to facilitate desired changes in its clientele and in their social environment in concert with available resources. It is not static, but one in which adjustments are continually being made in its structure and processes as it adapts to meet or serve the needs of its relevant publics in a changing social environment.

The fundamental aspect of the renewal process is that of planned change. Rational and systematic change enables the organization to discard the worn-out old and accept the more productive new. Planned change does not mean change for the sake of change, but rather the search for, and acceptance of, new ideas while retaining proven ideals. Hull noted the interrelationship of the renewal process and change thus (Law, 1971, p. 157):

> People as well as organizations need systematic renewal. Classroom teachers, university professors and state division supervisors find themselves bombarded with bits of information which influence daily activities. Some individuals succumb to the demands of their environment and ignore the avalanche of new knowledge. Others respond to each invation of their occupational domain on a first-come, first-serve basis and fail to establish priorities among competing demands. Systematic renewal requires people who know their role responsibilities in an organization and keep alert to emerging needs for change. An active organization develops staff and adjusts work roles to accommodate demands of the occupational environment.

For purposes of this study, the renewal process is deemed to be the product of four variables evident, in varying degrees, in the dynamic organization. Boone et al. (1971) identified these variables as (1) the existence of a defined systemic framework within which staff members are expected to function; (2) the degree of knowledge about and skill in management processes; (3) an understanding of the commitment to a tested conceptual approach for generating and effecting programs of change; and (4) a sensitivity and commitment to objective, systemic analysis for facilitating system responsiveness and renewal to the constantly changing needs of its publics.

Need Analysis and Leader Involvement. The analysis of needs identified in the renewal process constitutes a difficult, but essential, component of the programming concept. As a process, need analysis involves the utilization of a tested conceptual frame of reference in the assessment of psychological, social, and cultural characteristics of system clientele.

One approach to need analysis employs the concept of social systems -- at macro and micro levels -- as the analytical tool (Boone et al., 1971). In this approach need analysis is treated as a series of activities centering around groups and their leaders which exist in any society. These activities, or elements, in need analysis are: (1) a knowledge of the social system (i.e., county or area) within which the educational system functions; (2) the identification of groups within the larger social system; (3) the determination of target groups; (4) the identification of leadership within target groups; (5) gradual translation of extrinsic needs into felt needs; and (6) the linkage of groups in effecting changes that are outside the grasp or ability of a single group.

The degree of expertise evident in need analysis may vary within a social system as a condition of factors such as the nature of clientele, philosophy, and available resources (i.e., time and personnel). The existence of need analysis, however, will be characterized by such activities as (1) collection of data pertaining to the general characteristics of the larger society and specific clientele to be served, (2) attempts to assess the overall effectiveness of the educational program, (3) modification of the process, and (4) identification and mobilization of available resources.

To summarize, need analysis is an important educational and management tool for the treatment of data relating to needs of clientele

and to the subsequent allocation of the system's resources. The process is complex and, to be effective, requires the utilization of a tested conceptual frame of reference. As Boone et al. (1971, p. 23) observed:

> Simply put, the content of programs designed to effect change in established behavior patterns of man cannot be determined as a result of hunch or heresay. Too, they [educators] cannot assume that what is good for one sector of the population will be good for other sectors. Rather they must possess the ability to differentiate between . . . their needs, the sources of such needs, and social- cultural factors which may facilitate or impede participation of such publics in programs designed to help satisfy or fulfill needs.

Program Design and Implementation. To this point the researcher has identified the necessity for need identification through the renewal process and the analysis of needs whereby rational program choice is facilitated. Within the context of the Pamlico educational system, communication and coordination were advanced as a means of linking the two institutions toward the accomplishment of objectives set forth in the North Carolina State Plan for Occupational Education (1972). While not specifically stated, it is assumed that the selection of programs, identified through need analysis, is subjected to psychological and philosophical screens by each institution. In effect, educators have answered the questions of what is possible in terms of learner capabilities and instructional expertise and what is permissible in terms of roles and objectives assigned each institution. Attention is now directed to a method of implementing decisions made through the process of need analysis.

Program design and implementation are defined as the translation of educational needs into a meaningful program and the development of effective strategies for its implementation. As a process, program design and implementation may be conceptualized as a series of activities

identified as the development of long-range programs, the formulation of a plan of work, and the activation of the plan of work (Boone et al., 1971).

The long-range program consists of the identification of macro needs, the formulation of program objectives, and the delineation of desirable instructional strategies at the program level. The purpose of the long-range program is to provide direction in the development of lower level objectives and teacher strategies. Normatively, long-range objectives are stated in terms of "what is desirable." While usually not stated in measurable terms, objectives of the long-range program are (or should be) realistic in terms of existing programs, social and economic needs of the environment, and roles assigned the institution.

Implementing the long-range program requires the formulation of individual plans of work. The plan of work incorporates the development of teacher-level objectives, the selection and organization of appropriate learner activities, and the assessment of learner progress. The purpose of the plan of work is to add greater specificity to objectives identified in the long-range program. At this level, objectives are stated in terms of measurable outputs or accomplishments to be attained within the time span covered by the plan. The existence of clearly stated instructional objectives is an essential component of the teacher's plan of work. Their utility is identified as follows (Program Planning Guide, 1971, pp. 6-7):

> Objectives are derived from long-range goals [programs], and are the "heart" of the operation plan. They project what the local educational agency will do during the period in a manner which can be measured. This part of the plan thus becomes a basis for program evaluation.

Activating the plan of work involves the identification and mobilization of resources requisite for an effective instructional program. The process is characterized by a continuous monitoring of planned learner activities, continuous reinforcement of the learner, and the willingness to modify existing procedures on the basis of feedback from the environment.

Evaluation. Development of long-range programs and instructional level plans of work provide the basis for evaluation of individual courses of study, programs, and institutions. If each stage of the programming cycle is characterized by sound planning, the institution has an excellent blueprint with which to guide the activities of its personnel. As Boone et al. (1971, pp. 53-54) observed:

> Theoretically, judgments [evaluation] rendered about the effectiveness of the total institution in accomplishing its macro program objectives should represent the summed evaluative findings gleaned from long-term programs and plans of work developed and effected at its county and area operational unit levels.

The purpose of evaluation is the determination of impact brought about by the planned activities of the educational system or institution. In this sense, evaluation is a dynamic process in which the organization utilizes feedback from its environment as a basis for the expansion, modification, or curtailment of activities.

The responsibility for evaluation rests with personnel at all levels of the organization. At the instructional level, educators must develop expertise in the continuous evaluation of program outputs in relation to teaching objectives. Furthermore, outputs at the instructional level must be related to the objectives specified in the

long-range program. At higher levels, personnel must be capable of relating and interpreting these results to the institutional program objectives (Boone et al., 1971).

As a process, evaluation consists of three processual tasks:

1. The specification of measurable program outputs resulting from learner activities.

2. The delineation and analysis of program inputs in their relationship to the accomplishment of instructional, program, and institutional objectives.

3. The utilization of evaluative data as a guide for modification and/or redirection of educational programs, organizational structure, and management techniques.

THE RESEARCH METHODOLOGY

Due to the nature of this investigation, it was necessary to secure both objective and subjective data relating to the programming of occupational programs in the Pamlico educational system. The conditions of the investigation -- as set by the sponsoring agency -- involved:

1. A focus of the investigation on a single educational system.
2. An extended time span of investigation.
3. The utilization of personnel at both Pamlico High School and Pamlico Technical Institute in the identification of problems relating to articulation of occupational programs.
4. The utilization of personnel in the system's environment in the identification of educational needs relating to occupational education.
5. The formulation of recommendations which promote a more orderly programming of occupational education programs in the Pamlico educational system.

Methods and procedures used by the researcher in this study are described herewith in chronological sequence:

1. The Selection of a Research Method
2. Determining the Population
3. The Development of Interview Guides
4. The Collection of Data
5. The Treatment of the Data

The Selection of a Research Method

The type of study conducted was essentially set by conditions previously identified. In essence the researcher became an observer within a functioning educational system with the eventual responsibilities for: (1) identifying existing programming practices; (2) analyzing these practices in terms of the literature; and (3) drawing conclusions and recommendations for consideration by the state and system leadership. The researcher had no authority to implement or suggest changes at either the technical institute or the high school. The exploratory nature of the study and the inability of the researcher to control or manipulate the variables (other than the process of selection) provide the primary rationale for the employment of a descriptive research technique -- the case study -- as the method of investigation.

The case study is defined by Good (1954, p. 726) as a research method designed to:

> . . . take account of all pertinent aspects of one thing or situation, employing as the unit for study an individual, an institution, a community, or any group considered as a unit.

The utilization of the case study as a means of assessing program articulation in an educational system, a dynamic situation, placed a unique responsibility on the researcher. The exploratory nature of the study and lack of experimental control necessitated the development of a sound research process accommodating the study's fluid aspects. The requisite flexibility for the research is a characteristic of the case study. Simon (1969, p. 276) makes this observation:

> The specific method of the case study depends upon the mother wit, common sense, and imagination of the person doing the study. The investigator makes up his procedures as he goes along, because he purposely refuses to work within any set categories or classifications; if he did so, he would not be obtaining the benefits of the case study.

Selecting the Research Instrument

Several key factors were considered by the researcher in arriving at a functional method for gathering the data necessary for this study.

The nature of the data, primarily, would be the description of events and the behavior and perceptions of individuals as related to programming of occupational education. It was anticipated that a relatively small amount of data existed in documentary form which pertained, jointly, to both Pamlico High School and Pamlico Technical Institute.

The unique social setting of the investigation created conditions which necessitated the identification of possible restraints on respondent participation in the research. These restraints were broadly identified as: (1) cultural differences; (2) an unwillingness to provide information; (3) distortions by respondents; and (4) the fear of providing information concerning deviant behavior. Furthermore, the social setting was deemed to be a source of additional leads, or insights, into research activities not previously identified by the researcher.

The operation of both institutions under provisions set forth in The North Carolina State Plan For Occupational Education did require some amount of documentary evidence relating to the purpose of the investigation. Such documents could be utilized as:

1. a primary source of information.
2. complementary information.

3. corroboration of existing data.

4. a source of information not willingly given in another form.

After contemplating several possible methods in which to pursue the investigation, the researcher concluded that a combination of the personal interview, observations by the researcher, and the analysis of relevant existing and/or elicited documents constituted a feasible means of data collection. Collectively, the following conditions are illustrative of advantages associated with the research method:

1. An initial period of observation would permit the researcher to acquaint himself with particular aspects of the system's environment.

2. Observations would help the researcher identify the more useful variables for research.

3. Observations could assist in the identification of individuals having relevant information.

4. Documents, existant and elicited, could be subjected to content analysis by which new data might be generated, or the validity of existing data assessed.

5. The population of the study was relatively homogeneous in terms of vocabulary, educational level, and environmental conditions; thus, the utility of the personal interview was enhanced.

6. Personal contacts through the interview process increased the probability of respondent participation.

7. A standardized interview guide could be employed which possessed a common antecedent -- The North Carolina State Plan For Occupational Education.

Determining the Population

The purpose of the investigation mandated the selection of a population guided by functional relationships to programming of occupational education in the Pamlico educational system. Accordingly, the researcher defined the population in such a way that participation was

restricted to those individuals who (1) could assist in the identification of common problems associated with articulation of occupational education and the procedure to be employed in the study; and (2) the identification of key individuals able to make a significant contribution to the success of the study. Consequently, the population of this study is defined as:

> An exploratory group consisting of the total professional staff of both Pamlico High School and Pamlico Technical Institute, and selected area employers in Craven, Beaufort, and Pamlico counties. Selection of employers, as participants in the study, was based on (1) location within a reasonable commuting distance of Pamlico County; (2) the offering of employment opportunities consistent with types of occupational programs available in the educational system; and (3) a sizable work force providing frequency of employment opportunities.
>
> The primary group consisting of key respondents identified as: (1) the superintendent and program supervisor of the Pamlico County School System; (2) the chief administrative officer of both Pamlico High School and Pamlico Technical Institute; (3) the local director of occupational education in Craven-Pamlico County; (4) line, staff, and clientele of both Pamlico High School and Pamlico Technical Institute; and (5) selected instructional staff members in occupational programs at both Pamlico High School and Pamlico Technical Institute.

The Development of Interview Guides

A major task of the researcher was to plan and develop suitable guides for gathering data by personal interviews. This task was complicated by the absence of clearly defined variables in the initial stage of the research. Thus, the exploratory nature of the problem resulted in the subsequent development of two interview guides described as:

> An initial nonscheduled standardized interview guide designed to explore and describe the phenomena under study, and to articulate the specific information to be collected at a later date.[1]
>
> A scheduled standardized interview guide employed to narrow the scope of response, to increase the depth, validity, and relevancy of the data, and to provide a basis for the analysis of differences or similarities between respondents.

The Exploratory Interview Guide

The initial version of the nonscheduled standardized interview guide contained two sections, each containing seven open questions designed to allow respondents ample opportunity to express their opinions. Section One -- structured for use within the educational system -- was differentiated among appropriate headings identified as: (1) the instructional program; (2) resources available (or needed); (3) program or instructional objectives; (4) student characteristics; (5) employment opportunities within program areas; (6) coordination of efforts between Pamlico High School and Pamlico Technical Institute; and (7) individual perception of needs not previously identified. Section Two -- structured for use outside the educational system -- was similarly differentiated among headings identified as: (1) employment opportunities; (2) desirable attributes of applicants for employment; (3) attributes lacking in applicants; (4) respondent perception as to the occupational competency of Pamlico Technical Institute graduates; (5) respondent perception as to the occupational competency of Pamlico High School graduates; (6) suggestions for curriculum improvement in either Pamlico High School or Pamlico

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[1]The initial interview guide was developed by a member of the Articulation Committee (see Appendix) under the direction of the researcher.

Technical Institute; and (7) opinions as to how the Pamlico educational system could assist in the upgrading of those presently employed.

The guide was then submitted to members of an articulation committee (see Appendix) consisting of personnel employed in the Pamlico educational system. Items were analyzed for clarity of wording and relevancy to the purpose of the research. The final instrument incorporated the suggested changes of the articulation committee and was employed in the initial series of interviews.

A basic format was developed for use by an interviewer employed to assist the researcher in data collection. The approach may be summarized as follows:

1. Respondents were informed of the purpose for the research.
2. An identical sequence of questions would be maintained where possible; however, the interviewer was free to order questions in any sequency producing the desired participation of respondents.
3. The interviewer would clarify questions as required by the respondent.
4. Responses were recorded verbatim where possible; however, the interviewer could take notes and develop a summary of responses following the interview.
5. If possible, the interviewer would promote an informal atmosphere for the interview process.

In general the substance and format of the interview guide and the interview process appear to be consistent with broad assumptions undergirding the nonscheduled standardized interview. Richardson et al. (1965, pp. 45-51) identifies these as:

1. If the meaning of a question is to be standardized, the question must be formulated in words familiar to and habitually used by the respondent.

2. No fixed sequence of questions is satisfactory to all respondents; the most effective sequence for any respondent is determined by his readiness and willingness to take up a topic as it comes up.

3. Through careful study of respondents and selection and training of interviewers, the necessary skills can be achieved to tailor the question and their sequence so that equivalence of meaning is obtained from all respondents.

The data generated by the initial interview guide provided one rationale for the selection of specific procedures to be employed by the researcher. Identification of the problem reduced the scope of the project and added the requirements for data of greater depth, specificity, and relevancy. Accordingly, a second interview guide was developed to meet the aforementioned conditions.

The Research Interview Guide

Based on information developed during the exploratory stage of the research and consultations with the investigator's research advisor, the macro concept of programming -- as identified in the theoretical framework of the study -- was selected as the research guide. Programming (i.e., the planning, implementation, and evaluation) of occupational education provided direction to the study; yet, the numerous micro concepts contained within offered the researcher freedom requisite to the case study method.

The initial version of the interview guide to assess programming contained a total of 54 questions, which were differentiated by appropriate headings. These headings, or sub-sections, are identified as follows:

1. Structural Characteristics
2. Formal Communication
3. The Renewal Process

4. Need Analysis

5. Program Design and Implementation

6. Evaluation

The basic design of the interview guide followed the general criteria set forth by Richardson et al. (1965, pp. 40-44) and Rummel (1958, pp. 75-84). Briefly, the design provided for:

1. A statement of the purpose for the research.

2. A common language in which questions have the same meaning for all respondents.

3. Similar content (i.e., a common frame of reference).

4. A mixture of both open and closed questions.

5. The placement of sensitive questions near the end of each interview.

6. A common antecedent for all questions within the interview guide.

Questions were read by the interviewer. An allowance was made in the interview guide to record pertinent points which were made by the respondent during the interview, while additional space was provided on the back of each guide to allow for the recording of remarks not expected but having relevance to the interview question. Selected excerpts from respondents are included in the findings of the study.

The interview guide was then tested by application with a single individual at Pamlico High School. This pretest identified three weaknesses in the guide: (1) the length of time required for the complete interview was excessive; (2) the wording of questions created some minor problems of interpretation by the respondent; and (3) the use of open questions generated an overlapping of responses between sub-sections.

The results of the pretest pointed to the need for elimination of six questions which did not elicit data desired in the study. Also, some

minor regrouping of the questions appeared necessary for a more effective categorization of the responses. Furthermore, the depth and scope of responses to open questions dictated on-the-scene modification of interview techniques. More specifically, alterations of techniques occurred where responses to an open question provided data for one, or more, additional questions contained elsewhere in the guide. Adjustments were made to the guide, and a revised instrument was produced.

A second pilot test was conducted using personnel employed at Pamlico Technical Institute. Again, the length of time required for data collection was excessive. Respondents were observed to become tired and less willing to explore the open questions after a time period of approximately one hour. The clarity and relevancy of items provided no major problems in the second pretest.

Based on the two pilot tests, the researcher made further revisions in the interview guide. Additional questions were deleted, and seven questions were reworded. Also, it was decided that the application of the interview guide -- in total or in part -- would rest on certain characteristics of the respondent. In effect the decision as to what section(s) of the guide would be utilized with a particular respondent rested on: (1) position in the educational system; (2) willingness to participate; (3) the perceived importance of the data to the investigation; and (4) the specificity, clarity, and coverage exhibited by the respondent. Furthermore, the researcher felt that the overall quality of respondent participation would be increased through the use of a series of interviews -- within an extended time span -- of roughly one hour's duration.

The pilot studies had also given ample evidence that the recording system employed by the researcher was adequate. The taking of notes in

the course of the interview had not inhibited the willingness of respondents to participate.

The final interview guide was then completed and made ready for use in the collection of data required in the investigation. A copy of the final guide is included in the Appendix of the study.

The Collection of Data

The summary of research activities relating to the collection of data is broken into two stages for purposes of clarity. The initial stage was exploratory in nature and involved a sizable population in the identification of issues and variables relating to articulation of occupational education. The research stage (while still exploratory) dealt with more specific issues and involved a smaller population.

The Initial Stage

An initial step in the process of gathering data consisted of bringing the Pamlico educational system's leadership together for purposes of: (1) securing their commitment and cooperation for the research project; (2) an in-depth discussion of the broad objectives of the research; (3) the identification of specific local problems relating to the research; (4) delimiting the role of the researcher, the institutions involved, and university and/or state level personnel; and (5) the identification of the research population for exploratory purposes. The following is a summary of exploratory activities conducted during the summer and early fall of 1972.

The superintendent of Pamlico County Schools, the president of Pamlico Technical Institute, the director of vocational-technical programs at Pamlico Technical Institute, and a faculty advisor and two doctoral

students from the Department of Adult and Community College Education at North Carolina State University met on the campus of Pamlico Technical Institute. The purpose of this meeting was previously identified by the researcher.

An articulation committee was formed from employees of both Pamlico High School and Pamlico Technical Institute. This committee met in formal session on six occasions. The objectives of the articulation committee were to bring personnel of the two systems together in a problem-solving situation, and to assist the researcher in the identification of specific issues and procedures to be employed in the investigation. The issues identified by this committee are summarized and presented in the Appendix of the study. It should also be noted that public school members of the articulation committee were to be paid the sum of five dollars per hour for time involved in this activity. In addition an offer of expanded employment (30-35 hours per week) was made to public school personnel for their assistance during the summer of 1972. One public elementary school teacher accepted this offer and was utilized for research activities (the interview process) by the investigator.

The researcher conducted two ERIC searches in the development of background information relating to the investigation. The initial search dealt with articulation between secondary and post-secondary institutions as relating to occupational education. A second search centered around the role of student personnel and guidance services in both secondary and post-secondary institutions as relating to the students identification of career opportunities, program selection, and occupational placement.

Interviews were conducted with personnel at both the technical institute and the high school. In the case of the technical institute a total population was employed. Attempts to obtain a total population at the high school were frustrated by the absence of teachers who were: (1) attending summer school for educational purposes; (2) employed in summer jobs outside the county; or (3) a small number taking vacations outside the country. In no instance was the interviewer refused cooperation and assistance in the interview process.

Each interview was conducted at the respondent's place of employment (administrators of the high school and the total population of the technical institute) or in the home in the case of high school teachers. It was noted that the informal atmosphere created by familiar home surroundings enhanced the participation of respondents.

After greeting each respondent, the interviewer stated the purpose of the study and the respondent was asked to cooperate in the study. The interview guide was kept on a clip board and notes were taken as the interview progressed. In most instances the respondents revealed -- without probing by the interviewer -- most of the answers sought in the interview. In some instances the respondents asked for clarification of certain questions. In no instance did the respondent require more than a few moments to formulate his reply. The average length of time required was in the range of thirty to forty minutes per interview. At the conclusion of each interview, the interviewer verbally reconstructed the respondent's answers from her notes. The respondent was then asked if the interviewer's interpretation represented an accurate account of what had been said. In some few instances further discussion was necessary to clarify the response.

After leaving the respondent, the interviewer took time to record pertinent verbatim notations which could be used at a later point in the study. In addition, when interviewing was completed for a given day, the interviewer spent further time preparing a written record of each response plus personal reactions by respondents deemed pertinent to the study.

A second schedule of interviews was conducted among area employers in Pamlico, Craven, and Beaufort counties. The substance of questions asked respondents differed significantly from those asked personnel in the educational system.

Interviews with area employers were conducted in the office of respondents. The interview process was similar to that utilized in the Pamlico educational system. The average length of interview, however, was slightly less than that in the educational system. This difference was attributed to the more formal atmosphere surrounding the interview.

The interviewer was then asked to summarize her perceptions of existing attitudes, problems, and needs as garnered in the process of conducting a total of forty-five interviews. This information was compiled by the interviewer and utilized by the investigator as a source of leads in the research stage.

The Research Stage

The interview procedures utilized by the researcher were essentially those identified in the exploratory stage of the investigation. The increased structure of the interviews (i.e., additional numbers of closed questions, maintenance of sequence, etc.) appeared to create a more formal relationship between the researcher and respondent during the interview process.

The researcher spent considerable time familiarizing himself with Pamlico County and its educational system prior to conducting interviews. This was accomplished through numerous visits in the county, many of which were of 2-3 days duration. Informal visits were made at local civic organizations, the country club, and retail establishments. These visits elicited numerous inquiries as to the researcher's "line of business". The standard response of the researcher to such questions was "to study the relationships between occupational education in the high school and the technical institute". In no instance did the researcher lead the conversation into a detailed discussion of the investigation. Finally, the researcher rented an apartment in the community for the conclusion of the investigation.

Within the educational system, the researcher attempted to maintain an impartial and objective relationship with both Pamlico High School and Pamlico Technical Institute. This effort was complicated, however, in that office facilities and secretarial assistance were provided at the technical institute. This arrangement undoubtedly affected the relationship between the researcher and respondents at the high school -- particularly at the administrative level -- where the interviewer was sometimes asked "how do you people at the technical institute see this question?" This aspect of the research was accepted as a limitation of the study and is so identified elsewhere in the report.

In addition the researcher tried to avoid any identification with particular cliques or positional groups. Casual interactions with personnel were used as a means of identifying informal relationships and group leaders and avoiding the appearance of being unduly reserved.

The researcher also conducted numerous nonscheduled interviews in the course of the investigation. By and large, these took the form of informal chats in which additional leads or clarification of existing data were the principle by-products. These conversations were reconstructed from memory and recorded by the investigator.

It was found that the nonscheduled interview process, (i.e., the selection of respondents) could be controlled by the researcher's choice of work stations. When the investigator conducted research in the library for an extended period of time, certain personnel formed the habit of dropping by to see how things were going. The identity of personnel could be changed by an orderly shift from one area of the institution to another. In effect identifying informal relationships and the strategic physical placement of the researcher "across" interaction lines provided considerable insight into individual attitudes and interpersonal problems not identified in the scheduled standardized interview.

All scheduled, standardized interviews were conducted at the respondent's place of employment. The length of interviews ranged from thirty minutes to over four hours. In most instances the length of the interview was related to the position of the respondent and his overall knowledge of the programming process. Questions were asked in identical sequence and the interviewer assumed the role of listener, encouraging the respondent to go on talking and providing little direction other than asking for additional information or clarification of ambiguous or vague responses.

In addition to interviews and observations previously identified, the researcher utilized a variety of existing and elicited documents in the research process. Example of existing documents are statistical

records, demographic data, mandatory and suggested practices in the programming of occupational education, personal correspondence, and newspaper accounts relating to the Pamlico educational system. Elicited documents were mainly the researcher's field notes, records, and interview transcripts.

The Treatment of the Data

The limited population available in the research stage of the investigation did not lend itself to statistical analysis of the data. Accordingly, the researcher -- in consultation with the research advisor -- selected content analysis as the primary means of treating the data. Content Analysis is defined by Berelson (in Kerlinger, 1964, p. 544) as:

> . . . a method of studying and analyzing communication in a systematic, objective, and quantitative manner for the purpose of measuring variables.

As a process content analysis is laborious, time consuming, and inexorably linked to the qualifications of the researcher. Nonetheless, content analysis is a valuable research tool possessing considerable utility in the research methods employed by this investigator. Kerlinger (1964, p. 551) makes this observation:

> A large number and variety of psychological variables can be measured through content analysis: needs, values, attitudes, stereotypes, authoritarianism, ethnocentrism creativity, and so on.

The process of content analysis employed by the researcher is based collectively on the works of Rummell (1958, pp. 111-118), Mouly (1963, pp. 281-297), Kerlinger (1964, pp. 539-553), and Sax (1968, pp. 273-279). The process is described herewith in chronological sequence:

1. Categorization of Data
2. Units of Analysis
3. Character of the Data

Categorization of the Data

The first step in the analysis of data involved the grouping of responses, observations, or documents according to: (1) research objectives and (2) the source of the data. The purpose of such groupings was to provide a basis for comparison of responses between: (1) institutions within the educational system and (2) current practices within the educational system and the conceptual model of programming set forth in the theoretical framework of the study.

Units of Analysis

The units of analysis employed in the study are selected concepts within the theoretical model of programming previously identified. Thus, the units of analysis are generally accepted concepts, grounded in the literature, and commonly associated with the phenomena under study.

Character of the Data

Decisions as to the character, or utility, of the data rested with the researcher. To assist in an orderly, objective, and systematic assessment as to the worth of data, the researcher subjected the material to a series of fundamental questions. These questions may be summarized as follows:

> Does the data possess validity which can be checked by external sources?
>
> In the absence of an external source for validity testing, do the various overlapping, related, or repitious pieces of information hang together with no inconsistencies?
>
> Is the data relevant to the purposes of the study?

In regard to existing and elicited documents, the researcher also posed the following questions:

> Where was it produced?

When was it written?

Who was the author?

Is it a valid document?

Is the document original or an analysis by a subsequent author?

What was the purpose of the document?

SUMMARY OF FINDINGS

While the analysis of social and economic conditions surrounding the educational system was not the major purpose of this investigation, these factors do bring into play certain considerations which will influence the programming process within a systems context. The following comments reflect the researcher's interpretation of information previously set forth in the setting of the study.

1. The small population of Pamlico County and the absence of a large urban center in proximity to the educational system's service area (i.e., the area from which PTI can reasonably expect to draw students) will continue to place severe restrictions on efforts by both Pamlico High School (PHS) and PTI in the development of a more comprehensive occupational program than is currently in operation.

2. The relatively poor economic base of Pamlico County (i.e., low personal income, the lack of diversified basic industry, and limited taxable wealth) limits the capacity of PHS and PTI to provide continuing educational services other than those financed by state and federal sources. Any significant increase in available resources (current operating expense or capital outlay) will require additional allocations by the state and/or federal governments.

3. The existence of two community colleges and a technical institute in the neighboring counties of Craven, Lenoir, and Beaufort will place constraints on efforts by PTI to expand its geographical service area (and population base). Any growth in institutional enrollment is contingent on the attraction of an increased percentage of

students from a static or declining population base.

4. The disassociation of PTI and the Pamlico County School System was accompanied by some dissension between personnel of the two organizations. While maintenance of organizational integrity will constitute a pervasive influence in the articulation process, current system leadership appears willing to explore the foundation for increased coordination of educational activities at PHS and PTI.

Structure

Data generated in this section were employed to assess the nature of structural patterns between institutions in the Pamlico County educational system. These data were examined in terms of certain factors -- shared objectives, patterned activities, and environmental pressures -- which normally affect behavior within an organization.

The State Plan sets the broad objectives for each institution. Within these purposes local administrators may formulate lower level objectives which reflect the unique needs of PTI or PHS. Witnin the context of an educational system, there was limited evidence of cooperative goal setting which encompassed the broad needs of the community, provided a basis for identification of institutional roles, or articulated a framework by which activities or personnel could be better coordinated.

While the educational system did not have a statement of shared objectives, coordination of effort does exist. In several instances it appeared that the informal interaction of instructional personnel

provided the catalyst for administrative actions in coordinating the resources of the two institutions.

The absence of a clearly defined framework (i.e., shared objectives) appeared to reduce the frequency and formality of interaction between administrators of the two institutions. Coordination was effected by informal dialogue between administrators, the actions of informal groups, and activities normally associated with the student personnel function. In the context of formal patterned interaction, the student personnel function constitutes the most frequent "working link" between the two institutions.

The principal internal consideration affecting the programming process at both PTI and PHS is student aspirations. The high school appeared to view State Department of Public Instruction policy as the major external factor affecting the direction of programming. At PTI the pervasive consideration in program selection and implementation is Department of Community College policy relating appropriations to full-time equivalent enrollment. A second major influence at PTI is the availability of employment opportunities for program graduates.

Communication

Written communication between institutions mainly consisted of securing the permission of the superintendent of schools for enrollment of special-need high school students at PTI and the delineation of procedures for joint utilization of PTI instructors at PHS. In the absence of opportunities for structured interaction, the informal group appeared to play an important role in informational exchange between the two institutions. The influence of informal

groups was most apparent in bringing about the admission of pregnant high school students at PTI.

The Renewal Process

Both PTI and PHS have comprehensive policy manuals which provide a systemic framework for activities of personnel within the institution. A particular strength of PTI is a standing policy committee which provides administration with continuing feedback from faculty and students. Pamlico High School has utilized inputs of both instructional personnel and state and national organizations as the basis for policy formulation.

Administrators at both institutions separately employ periodic orientation conferences and staff meetings to promote an understanding of relationships between occupational education and other instructional areas. At the working level, informal interaction of instructional personnel appeared to be the principal method of program coordination within and between institutions, although this reliance on oral communication is subject to some confusion.

The lack of a full-time local director of occupational education was viewed as an organizational weakness by some PHS respondents. The state evaluation team indicated a need at PHS for additional administrative assistance in curriculum development and the effective use of program advisory committees. While evaluation of instructional personnel is chatacterized by systematic guidelines, similar (local) procedures for evaluation of program effectiveness appeared to be lacking.

At PTI the diverse nature of clientele has created concern as to the adequacy of the instructional process. The institute is currently experimenting with instruction based on behavioral objectives in the

auto mechanics and business programs; however, increased direction by the instructional leadership is needed in coordinating these activities. A weakness of PTI appears to be the absence of criteria for the recruitment, selection, and evaluation of personnel.

Need Analysis

Both PTI and PHS have planning teams for occupational education. At PHS planning is a function of activities of the superintendent, the principal, and teachers as their programs are affected. Participation by the local director of occupational education is limited by his split responsibilities in both Craven and Pamlico counties. Planners at PTI were identified as the president, the director of occupational education, the director of student personnel, and instructors in instances where their programs are involved.

The collection of data relating to community characteristics such as population, income, and employment opportunities for use by both planning teams was normally employed in generating supporting information for new program application. As a continuing process, the assessment of community characteristics appeared to be somewhat episodic and lacking in structure.

Student aspirations, as identified by occasional surveys, the instructional staff, and the student personnel and guidance function appeared to be the principal data employed by both planning teams. In addition, data concerning the students (family income, academic disadvantages, and behavioral problems) was employed in their assignment to special programs for the disadvantaged and handicapped.

Modification of the instructional programs at both institutions is primarily related to information supplied by students. At PHS this feedback is complemented by a state evaluation of program effectiveness and information supplied by the instructional staff and the guidance counselor. In this respect the utility of the guidance function appeared to be limited by lack of personnel. While PTI also employed information from the instructional staff and student personnel function, fluctuation of enrollment (i.e., the extent to which a program "pays its way") is a central concern in program change or termination.

Some concern with existing organizational structure (effectiveness in delivery of an instructional product) was evident at both PTI and PHS. At PHS this concern appeared to be related to the absence of a full-time local director of occupational education serving as the advocate for vocational programs in policy formulation and allocation of resources. Pamlico Technical Institute appeared to have considerably more freedom in structural modifications, as state support funds may be routinely transferred between line items. Currently, PTI is experimenting with a systems approach to instruction which necessitated a redefining of role relationships within the total instructional program.

A comprehensive listing of the system's physical facilities is available and may be utilized by planning teams at both PTI and PHS. Fiscal resources are allocated at the state level (i.e., the State Department of Public Instruction and the Department of Community Colleges) by formulas basically relating to student enrollment. Local fiscal support for both PTI and PHS is allocated by the Board of County Commissioners, on the basis of state law and/or the requests of the president or the superintendent of schools. Within the context of an

educational system, there appeared to be little effort to identify resources available in other institutions as a basis for joint utilization.

Program Design

Responsibility for developing a long-range plan at PHS rests with the local director of occupational education. Presently, a comprehensive plan encompassing the total program does not exist, although immediate goals for two special programs are identified in the 1973 Local Plan for Occupational Education. The Local Plan did contain measurable program objectives, major learning activities, and the basis for evaluation as related to the seafoods industry program; however, similar data were not evident for other areas within the PHS occupational education program.

At PTI responsibility for a long-range plan rests with the president. The process of developing the long-range plan was defined as the assimilation of data through staff meetings, local and state conferences, and dialogue with local industry. Currently, the long-range plan consists of broad objectives set forth by the president and covering the time period 1973-1976. The development of measurable program objectives, major learning activities, and the basis for evaluation was evident in the auto mechanics and business programs. This activity is experimental, and administrative plans to involve additional programs are contingent on the complexity of the task and results obtained.

Instructors at both institutions formulate individual plans of work; however, there is considerable variance in uniformity and degree of specificity. Attempts to formulate instructional objectives which

identify the desired behavioral change in the student were evident at PTI. One catalyst for development of behavioral objectives appeared to be the interdependence of major skill instructors and those in related areas (a consequence of the "open-door" admission of students with varying ability levels and subsequent need for remedial instruction) which required planned coordination of instructional efforts.

Respondents identified problems arising from efforts to coordinate more closely the occupational education programs of PTI and PHS as:

1. Admission of high school students in any significant number could affect the image of PTI as an adult institution.
2. Admission of high school students could adversely affect the allocation of state support funds for PHS.
3. Coordination of occupational education programs may require modification of organizational structure at the local level.
4. The State Board of Education would be expected to provide increased flexibility for local planners.
5. Coordination of efforts at the local level would require mutual support by the Department of Public Instruction and the Department of Community Colleges.
6. Coordination would require the complete and continuing commitment of the president and the superintendent of schools.
7. The depth of planning in meaningful program coordination may be limited by availability of personnel (i.e., time and expertise).

Evaluation

At PHS the primary means of program evaluation appeared to be the visit of state evaluation teams at five-year intervals and efforts by the local director of occupational education to identify the number

of program graduates employed in areas for which they received training. Pamlico Technical Institute had no systematic procedures (i.e., defined criteria) for program evaluation. Conclusions as to the effectiveness of PTI programs are the product of factors such as feedback from students, number of students finding employment within their area of study, and the capacity of the program to attract and retain students in numbers sufficient to offset the cost of instruction.

CONCLUSIONS AND RECOMMENDATIONS

The major purpose of this study was to investigate the programming practices of PTI and its articulation with the secondary public school system (grades 10-12) in Pamlico County. More specifically the study attempted to answer the following question: Was there planned and coordinated articulation of programming activities at both secondary and post-secondary levels concerning (1) patterned interaction of personnel, (2) communication between institutions, (3) institutions and the renewal process, (4) need analysis relating to occupational education, (5) the design and implementation of occupational programs, and (6) the evaluation of occupational programs?

The theoretical orientation of the study was one of organizational programming activities within the context of a social system. Coordination of efforts was held to occur through the process of systemic linkage and was related to the degree that PTI and PHS exhibited characteristics of a common social system. A model was employed as the basis for investigation of existing programming activities at both institutions. This investigation gave rise to recommendations which might be employed by the educational leadership as one approach for modification of existing occupational programs or organizational structure.

The research approach employed was that of the case study. Information was obtained through personal interviews, personal observations, and content analysis of documents. Two interview guides (and two populations) were employed for (1) tentative identification

of factors requiring more detailed study and for (2) the development of specific data relating to macro elements of the programming model.

A major consideration of the North Carolina State Board of Education in funding this research project was the development of a "master Plan" by which the resources of PTI and PHS could be more effectively utilized in providing programs of occupational education. The following conclusions and recommendations represent one approach available to the educational leadership by which this objective may be realized.

1. The absence of clearly defined objectives for the educational system appeared to promote some variability of institutional activities relating to occupational education. This variance was evident in individual perception of the relative importance of forces in the system's environmental and delineation of institutional roles within the educational system.

In efforts to create a defined systemic framework as the basis for institutional coordination, the educational leadership (i.e., the president and superintendent) may wish to consider a comprehensive study of total community needs relating to occupational education. This study could culminate in the identification of broad system objectives and institutional roles consistent with state law -- but more reflective of local needs.

2. Communication between institutions is primarily oral. In the absence of structured channels for information exchange (with certain exceptions such as admission of special need students to PTI), occasional interaction of personnel with similar positions or the informal group appeared to be a major factor in existing program coordination.

In promoting the exchange of information, which is less subject to misinterpretation or lack of relevancy to the occupational program, the educational leadership may wish to consider the formation of a system advisory committee for occupational education. A committee consisting of key administrators, staff personnel, teachers, and students could be charged with promoting an orderly flow of information (and recommendations for procedural modification) between institutions for purposes such as (1) the smooth transition of students in the educative process, (2) the efficient development of student activities, and (3) the effective use of available resources. Furthermore, the activities of this committee could be enhanced by inputs of area employers or lay groups as needed.

3. Both PHS and PTI engage in activities designed to promote a more congruent relationship between the institution and its environment. Within the context of an educational system joint efforts to bring about planned change are hindered by factors such as: (1) the absence of clear systemic structure (previously identified), (2) the diverse values and expectations of personnel, and (3) a lack of unified procedures for the assimilation and evaluation of relevant data (e.g., current research in occupational education).

In formulating recommendations relative to system renewal, the researcher made the following assumptions: (1) Both PHS and PTI would continue individual renewal activities predicated on needs more or less unique to each institution; and (2) recommendations advanced in items one and two of the study would be favorably received by the educational leadership. To further enhance the capacity of the educational system to act and react to environmental considerations, the educational

leadership may also wish to consider: (1) periodic meetings of all personnel for purposes of informational exchange, related to system objectives and institutional roles, which may enhance the climate for increased educational efficiency; and (2) some joint utilization of library resources in acquisition of pertinent materials and their dissimination throughout the educational system.

4. Need analysis at both PHS and PTI appeared to be mainly a process of determining student interest through occasional surveys, inputs from the instructional staff, and the guidance and student personnel function. At PTI data concerning student aspirations was supplemented by feedback from local industry regarding training needs or employment opportunities. Both institutions have loosely structured planning teams for occupational education; however, the limited resources of the county (e.g., fiscal resources, population and employment opportunities) appeared to promote some frustration in attempts to implement a more comprehensive process of need analysis.

In efforts to develop increased capabilities in need analgies, the educational leadership may wish to consider alternatives such as: (1) A shared and more structured information system whereby data such as population shifts, industrial training requirements, employment opportunities, and available resources may be analyzed within a system context; (2) the allocation of additional resources to the student personnel and guidance function whereby the total needs of students may be more effectively identified; and (3) increased utilization of program advisory committees. While applicable to both institutions, PTI may wish to give particular attention to the identification of unique groups within the large population (e.g., the aged,

potential migrants, etc.) and one establishment of dialog with group leaders whereby needs for additional programs may be identified.

5. Currently, neither PTI nor PHS has long-range plans for occupational education as defined in this study.[1] Considerable effort was evident in some instructional areas in the delineation of measurable program objectives, instructional strategies, and the basis for evaluation. Instructor plans of work were, in the main, characterized by diversity of style, scope and specificity.

The existance of an educational system composed of one high school and one technical institute represents a unique opportunity for coordination of instructional effort. In strengthening articulation between PHS and PTI, the educational leadership may pursue one avenue described herewith as: (1) meetings of professional personnel along subject area lines; (2) cooperative identification of skill requirements within occupational areas and definition of institutional roles in effecting skill mastery by the student; and (3) development of instructional plans of work which reflect a common language, a specific skill to be mastered (the behavioral change), an identification of instructional strategies and a basis for evaluation. This will assure that articulation between PHS and PTI may be effected on the basis of individual students.

6. Evaluation of occupational programs (in the absence of a local evaluative instrument) at PHS appeared to be an assessment by

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[1]For purposes of this study the terms "long-range plan," "long-range goals," and "long-range program" were considered to have similar meaning. (See Handbook, p. 28, Program Planning, p. 6, and Boone et al., pp. 33-40).

state teams at specific intervals and efforts by the local director of occupational education to determine the number of graduates finding employment in area for which they had been trained. At PTI program effectiveness was assessed through student feedback, dialog with local industry, and the capacity of a program to attract and retain students in numbers sufficient to offset the cost of instruction.

Effective utilization of system resources (e.g., the decision to terminate a program) could be complicated by opinions as to the "worth" of a program. To facilitate a more objective basis for decision-making, the educational leadership may wish to develop more standardized procedures for program evaluation. In this respect, materials currently available through the Department of Community Colleges, Department of Public Instruction, the National School Board Association, and others could be employed as the basis for selection of specific evaluative criteria.

Recommendations for Further Study

Based on a review of the literature, study of the State Plan for Occupational Education, and responses given during the interview process, the researcher concluded that many pertinent questions regarding the desired scope and intensity of coordination between PHS and PTI remained unanswered. It does appear that a programming process involving a single high school and technical institute and leading to the formulation of more standardized instruction plans of work merits further study. It is recommended that the educational leadership consider a request that the North Carolina State Board of Education fund a pilot project for further study and implementation of cooperative planning for occupational education in Pamlico County. It is further

recommended that the request encompass (1) an extended time period of not less than two years and (2) the employment of a full-time project coordinator.

As part of the project, the educational leadership may also consider bringing the following items to the attention of the State Board of Education as objectives for exploratory study which could lead to a request for clarification or modification of existing state policy.

1. To identify the basis for joint-utilization of instructional personnel as a means of promoting the efficiency of the Pamlico educational system.

2. To investigate the feasibility of admitting selected high school rising juniors and seniors to occupational extension classes at PTI during the summer quarter.

3. To identify the basis for granting credit (at PTI) for demonstrated skill or subject mastery by students which may have been acquired at other institutions or through work experience.

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APPENDICES

APPENDIX A

INTERVIEW GUIDE

The purpose of this study is to assess programming of occupational education in Pamlico County. Specifically, the research is geared to an in-depth study of individual programming practices at both Pamlico High School and Pamlico Technical Institute, and to explore means by which the two institutions could better coordinate programs. This study was authorized by the Occupational Research Unit of the North Carolina State Department of Public Instruction and has the support of the superintendent of Pamlico County Schools and the president of Pamlico Technical Institute.

* *

OBJECTIVE ONE: TO IDENTIFY STRUCTURAL CHARACTERISTICS, ENCOMPASSING BOTH INSTITUTIONS, WHEREBY ACTIVITIES OF PERSONNEL ARE COORDINATED.

1. Does administration make provisions for systematic inter-organizational meetings of personnel of both Pamlico High School and Pamlico Technical Institute?

2. Are there specific problem areas in which personnel of the two institutions have frequent (2-3 times per month) opportunities to work cooperatively for a solution?

3. Within your institution, who do you consider to be the individual or individuals responsible for articulation with the high school (or technical institute)?

4. Have the two institutions formally worked cooperatively in order to accomplish some desired outcome?

5. Do you have a statement of shared objectives -- developed at the local level -- by which both Pamlico High School and Pamlico Technical Institute may structure the activities of personnel?

6. On what basis do you define the role of your institution as it relates to Pamlico Technical Institute (or Pamlico High School) in providing occupational education for the people of Pamlico County?

7. In your opinion, what are the principal external forces acting on your institution in respects to occupational education?

* *

OBJECTIVE TWO: TO IDENTIFY FORMAL COMMUNICATION PATTERNS BETWEEN ADMINISTRATORS WITHIN THE EDUCATIONAL SYSTEM.

1. Does Pamlico High School conduct follow-up studies of former students enrolled at Pamlico Technical Institute?

2. Is the principal channel of communication between administrators verbal or written?

3. When institutional policy is changed, is the technical institute (or high school) officially notified or involved in any manner?

4. When new employees join the educational system, are they provided information regarding the roles and purposes of the two institutions?

5. Does the technical institute make use of the bulletin boards or other display space at the high school?

6. Are institutional publications, such as newsletters, news releases, or recruitment material routinely made available to personnel of the educational system?

7. Does the institution distribute an annual "progress report" summarizing institutional activities, enrollment data, etc.?

8. In your staff meetings do you frequently (2-3 times per year) discuss institutional relationships within the educational system?

9. By your own estimate how many times within the past year have you engaged in problem-solving activities in which personnel of both institutions were involved?

10. Has the Board of Education and the Board of Trustees ever held a joint meeting?

11. Have the various advisory committees of the two institutions ever held a joint meeting?

* *

OBJECTIVE THREE: TO IDENTIFY ACTIVITIES BY WHICH INSTITUTIONS ASSESS AND REACT TO CHANGE IN THE ENVIRONMENT.

1. Does the institution have a written policy manual?

2. Does the institution have a formal statement of philosophy?

3. Have there been efforts to hold in-service training programs through -- or in conjunction with -- the technical institute (or high school)?

4. Does the institution have a formal statement of objectives (missions statement) for occupational education?

5. Do instructors in occupational education programs develop statements of behavioral objectives for individual courses?

6. In instances where instructors do have statements of behavioral objectives, are these communicated between institutional programs?

7. What activities are conducted in order to promote the working relationship between teachers in the occupational program and those in other instructional areas?

8. What activities are conducted in order to promote the relationship between occupational education and the community?

9. Are personnel systematically evaluated by supervisors and informed of findings?

10. Does the institution have a formal program of self-evaluation?

11. Does the institution have a systematic procedure for the evaluation and/or implementation of innovative techniques in occupational education?

* * * *

2. Does the institution assimilate data which, collectively, forms an "informational base" for the identification and analysis of educational needs of its clientele? If so, does it include:

A. Characteristics of the Community?

( ) A survey of existing or anticipated economic activities (e.g., new or expanding industry, availability of immediate employment for graduates, trends in composition of labor force, etc.)
( ) A survey of community needs embracing social as well as manpower needs.
( ) Population data (e.g., migration patterns, identification of age, race, or economic "groups" with unique educational needs)

( ) Assessment of community attitudes relating to the institution or specific programs.
( ) Delineation of local issues affecting the educational program (e.g., "career education")
( ) Evidence of support by local groups such as county commissioners, chamber of commerce, civic organizations, etc.

B. Student Data?

( ) Assessment of student (potential) aspirations within the high school and/or community.
( ) Number of high school graduates in service area.
( ) Institutional graduates - number of program area.

( ) High School drop-outs and disposition.
( ) Patterns of attendance in post-secondary institutions.
( ) Follow-up study of graduates.
( ) Follow-up study of drop-outs - technical institute.

C. The Institutional Program?

( ) Programs currently available within the institutional service area (total public and private).
( ) Enrollment by program and/or grade level.
( ) Feasibility of program(s) termination.

( ) Assessment of enrollment trends - by program.
( ) Assessment of current instructional techniques.
( ) Assessment of guidance activities relating to occupational education.

D. The Analysis of Organizational Structure?

Does the institution periodically study organizational roles and relationships as one means of achieving a more functional division of labor?

E. Identification of Available Resources?

( ) Additonal equipment needs.
( ) Adequacy of present facilities to support existing and/or planned additional instructional programs.
( ) Strengths and weaknesses of existing personnel.
( ) Additional personnel requirements.
( ) Financial resources - federal, state, and local.
( ) External resources (public or private) which exist in other institutions within the service area.
( ) Cost analysis of existing and/or projected programs.

* *

OBJECTIVE FIVE: TO IDENTIFY ACTIVITIES BY SYSTEM PERSONNEL IN THE DESIGN AND IMPLEMENTATION OF OCCUPATIONAL PROGRAMS.

1. Based on the institution's "information system", does the leadership formulate a long-range plan (2-5 years) for occupational education?

2. If the institution has a long-range plan, who is responsible for its development?

3. At the program level, does the institution have a statement of measurable outputs or accomplishments to be attained?

4. At the instructional level, do teachers formulate individual plans of work? Do plans of work include:

( ) The delineation of specific learner needs encompassed within macro needs identified in the long-range program?
( ) Identify behavioral changes required to fulfill macro level needs?
( ) Provide a measurable basis for evaluation?

5. In the process of program design and implementation, has consideration been given to a more formal working arrangement with the technical institute (or high school)? What are the problems arising from such a relationship?

OBJECTIVE SIX: TO IDENTIFY EXISTING EVALUATIVE TECHNIQUES AS RELATED TO PROGRAMS OF OCCUPATIONAL EDUCATION.

1. Does the institution have an evaluative instrument for programs of occupational education?

( ) how was this instrument developed?
( ) does the instrument attempt to identify extraneous variables such as poor facilities, class size, and lack of suitable equipment which inhibit the attainment of teacher or program level objectives?
( ) if extraneous variables have been identified, did this identification serve as a basis for corrective action by the system's leadership?

2. Does the institutional plan for evaluation of occupational education specify evidences of behavioral change as a means of assessing the extent to which teacher or program level objectives have been realized? If so:

( ) are outputs overt or covert?
( ) are inputs from area employers included in the evaluation process?
( ) are parents and/or citizen groups included?
( ) are representatives of labor or middle management included?
( ) are students of the institution -- past or present -- included?

APPENDIX B

A ROSTER OF SECONDARY AND POST-SECONDARY PARTICIPANTS FORMING THE ARTICULATION COMMITTEE

The Secondary Schools

D. T. Potter, Distributive Education Teacher
Pamlico High School

Barbara D. Collier, Business Education Teacher
Pamlico High School

Jane F. Diehl, Elementary Language Arts Teacher

Janet C. Leary, French Teacher
Pamlico High School

Beulah S. Prescott, Business Education Teacher
Pamlico High School

Pamlico Technical Institute

A. C. Hathcock, Electrical Instructor

Hazel H. Alcock, Business Administration

H. M. Parson, Sr., Construction Instructor

Charles H. Autry, Auto-Diesel Instructor

Terry H. Garrison, Coordinator, Disadvantaged and Handicapped Program

Gary B. Collier, Business Administration

APPENDIX C

CRITERION ITEMS EMPLOYED IN EVALUATION OF
OCCUPATIONAL EDUCATION AT
PAMLICO HIGH SCHOOL[1]

Working Advisory Committee

Instructional Program:

- Student Skill
- Safety
- General
- Technical
- Individual Training Plans

Student Discipline

Teacher-Faculty Rapport

Teacher Participation in Student Selection

Class Enrollment

Maintenance of Materials and Tools

Educational Courses

Physical Facilities: (Tables, bulletin boards, file cabinets, office phone, heat, lights, ventilation, etc.)

Maintenance of Records and Reports: (1. Follow-up; 2. Lesson Plan; 3. Equipment and Tools; 4. Work Schedule; 5. Extended Term, and 6. Monthly Report)

Location and Size of Laboratory

Housekeeping - Laboratory and Instructional Area

Supplies and Teaching Materials

Texts and References

Live Project (T.P.T.)

Job Placement and Supervision

VICA Organization and Supervision

Student Dress

Teacher Professional Growth:
1. VICA; 2. NCVA; 3. AVA;
4. NCTIETA.

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[1]Evaluation A Key to Program Improvement. Division of Occupational Education, Department of Public Instruction, Raleigh, North Carolina.

APPENDIX D

A SUMMARY OF FINDINGS AND CONCLUSIONS OF THE EXPLORATORY STUDY GROUP[1]

The data presented is based on a total of fifty-five personal interviews conducted by the exploratory study group. Summarization is by position of the respondent (i.e., Pamlico Technical Institute, Pamlico Public Schools, or area employers).

PAMLICO TECHNICAL INSTITUTE

1. A majority of students have needs for remedial instruction in both reading and mathematics.

2. The heterogeneous composition (in terms of ability) of two-year classes requires some reassessment of existing instructional techniques.

3. The sharing of equipment and personnel between the technical institute and the high school is desirable.

4. The high school should offer related courses designed for occupational students.

PAMLICO PUBLIC SCHOOLS

1. The number of counselors is totally inadequate. Counseling is often left to teachers who are ill-prepared or lack sufficient time to discharge this function.

2. The counseling function should be expanded to include the junior high school.

3. Many occupational students need remedial instruction in reading and mathematics. Special classes are needed for this purpose.

4. Students should be introduced to vocational education in the elementary school.

5. Increased communication and sharing of equipment with Pamlico Technical Institute is desirable.

6. Some high school students should be allowed to attend extension classes (for credit) at Pamlico Technical Institute.

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[1]Interim Report of the Pamlico Articulation Committee. (Memorandum dated October 18, 1972).

AREA EMPLOYERS

The following data is a compilation of responses to questions raised during the interview.

Areas in Which Employment Opportunities Currently Exist

Sales Clerk	Diesel Mechanic	Management
Woodworking	Machine Operator	Carpenter
Secretarial	Lab Technician	Welder
Mechanical	Pipe Fitter	Brickmason
Electrical	Mill Wright	Bookkeeper

Desirable Attributes of Job Applicants

Good Attitude
Past Experience
Knowledge of Task
Ability to Communicate
Personal Appearance
Educational Qualifications
Honesty
Ability to Get Along With People
Pride in Work

Attributes Lacking in Applicants

Willingness to Work

Poor Attitudes

"In general, high school students have poor attitudes"

"Students are allowed to graduate with inadequate training. They lack ability in mathematics and related studies."

Employer Perception of Pamlico Technical Institute Graduates

Graduates have been very satisfactory (N=9)

Graduates tend to quit within a short period of time (N=1)

The adult education program appears good. The trouble seems to be in the curriculum area. Programs are filled with unqualified and unmotivated people (N=1)

Employer Perception of Secondary School Graduates

The Distributive Education Program has been very satisfactory (N=5)

Some graduates fail because they have a poor knowledge of skills required to perform their jobs (N=1)

Lack of knowledge in the utilization of equipment - the high school and the technical institute should share what equipment they do have (N=1)

Students who have just completed high school are not ready for employment (N=1)

A high turnover of high school graduates employed (N=1)

Suggested Curriculum Improvements

Use educational materials available through industry.

Students should be more carefully screened before admission to vocational programs.

Teachers should pass only those students who are performing at acceptable levels.

The construction curriculum (at the technical institute) should be shortened and women encouraged to enter the field.

More specialized instruction should be offered in some areas (e.g., automotive air conditioning, and transmissions).

More emphasis on the importance of personal appearance, human relations, and how to apply for employment.

In the secretarial program (at the technical institute), don't be too specific (i.e., legal, medical, etc.). Just give the student a good general education.

Additional counseling to assist the student in career selection.

Suggestions for Upgrading of Present Employees

Offer more 'Dale Carnegie' type courses.

Specialized courses on the use of new equipment and instruments.

Offer courses within the industrial facility.

Offer extension courses more closely related to the employment task of the individual.

Offer extension classes during morning hours as well as the evening program.

Use the resources available in local industry.

APPENDIX E

Table 1. NET MIGRATION BY RACE, SEX AND AGE GROUPS - PAMLICO COUNTY 1950 - 1960

1950 Age	1950 Population	1960 Age	1960 Population	Percent of 1950 Group Present in 1960
Male-White		**Male-White**		
0-4	403	10-14	356	88.3
5-9	353	15-19	290	82.2
10-14	316	20-24	131	41.5
15-19	264	25-29	138	52.3
20-24	215	30-34	179	83.3
25-34	444	35-44	383	86.3
35-44	417	45-54	374	89.7
45-54	365	55-64	304	83.3
Female-White		**Female-White**		
0-4	372	10-14	337	90.6
5-9	313	15-19	233	74.4
10-14	308	20-24	138	44.8
15-19	275	25-29	178	64.7
20-24	189	30-34	173	91.5
25-34	405	35-44	383	94.6
35-44	433	45-54	392	90.5
45-54	348	55-64	314	90.2
Male-Nonwhite		**Male-Nonwhite**		
0-4	269	10-14	240	89.2
5-9	231	15-19	168	72.7
10-14	242	20-24	106	43.8
15-19	189	25-29	96	50.8
20-24	118	30-34	83	70.3
25-34	189	35-44	149	78.8
35-44	167	45-54	146	87.4
45-54	148	55-64	93	62.8
Female-Nonwhite		**Female-Nonwhite**		
0-4	261	10-14	244	93.5
5-9	236	15-19	179	75.8
10-14	205	20-24	108	52.7
15-19	216	25-29	112	51.9
20-24	155	30-34	113	72.9
25-34	197	35-44	166	84.3
35-44	176	45-54	150	85.2
45-54	140	55-64	104	74.3

Source: Economic Potential Study, Pamlico County, North Carolina, July, 1969, p. 7.

Table 2. COMMUTING PATTERNS FOR PAMLICO COUNTY - 1960

County to Which Commuting	Number Commuting
Beaufort	12
Carteret	16
Craven	844[1]
Jones	11
Onslow	42
Others	50
TOTAL	975

[1]Primarily the Civilian Work Force at Cherry Point Marine Air Station.

Source: Commuting Patterns in North Carolina, 1960, United States Bureau of Census.